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10. Nonroutine and Routine Hazardous Material Transfers

10.1 Off-Normal Hazardous Materials, Substances, and Wastes Transfers

Arrangements for Off-Normal Transfers

Onsite transfer of some off-normal hazardous materials may require special handling. The group responsible for moving the material (MMS, HWM Division, or MDD) may arrange the following:

- Blockading and access control of onsite or offsite roadways
- PSO escorts
- Use of specialized personnel and operating equipment
- Use of additional Laboratory support (safety, environmental, transportation, criticality, materials accountability, and emergency response)
- Use of outside consultants and specialists
- Transfer during off-shift hours.

Off-normal hazardous materials, substances, and waste transfers meeting criteria specified in Chapter 2 of the *LLNL Health and Safety Manual*. require an OSP, prior approval, and review by the Hazards Control Safety Team.

10.2 Transfer of Oversized Equipment and Packages

Use of the Riggers Group

Packages too large to transport in designated Laboratory transport vehicles are transferred by the Riggers Group in the Plant Engineering Department.

Transfer Requests from Responsible Groups

Transfers are made at the request of the HMPT responsible group (MMS, HWM Division, or MDD) to assure that containment, communication, and controls are adequate to provide safe transfer of the material.

10.3 Vehicle Requirements

Vehicles That Cannot Be Used to Transport Hazardous Materials

Hazardous materials, substances, and/or wastes, excluding analytical samples, may not be transported in bicycle baskets, lab carts, automobiles, or personal vehicles.

Restrictions on Use of Vehicles

Vehicles used to transport hazardous materials, substances, and/or wastes at the Main Site and/or at Site 300 must meet the following minimum restricts and requirements:

- No maintenance or refueling is permitted on any vehicle carrying hazardous materials except for emergency situations and only after being reviewed by Hazards Control.
 - Vehicles shall not be loaded in excess of their rated weight limit.
 - Personnel are permitted to ride in the cab section only.
 - No hazardous materials, substances, or wastes are permitted in the cab section.
 - DOT hazardous materials compatibility requirements or other LLNL compatibility requirements must be followed.
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Use of Forklifts

Forklifts used to transport hazardous materials, substances, and/or wastes at the Main Site and/or at Site 300 must meet the following minimum requirements:

- Forklifts must be approved for the load and inspected according to the *LLNL Health and Safety Manual*, Supplement 29.04A.
 - Forklifts used to transport hazardous materials, substances, and/or wastes shall not exceed their rated lift capacity or loaded in excess of their rated weight limit. No more than two 55-gal waste drums containing liquids on wooden pallets or four 55-gal waste drums on plastic pallets may be transported on one forklift at a time.
 - Only the forklift driver is permitted to ride in the vehicle.
 - DOT hazardous materials compatibility requirements or SOP 530 compatibility requirements must be followed.
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Swipe Sampling Vehicles

Vehicles used to transport radioactive materials and wastes at Main Site or at Site 300 must be swiped by Hazards Control for radiation contamination on a routine basis after transport of radioactive materials or wastes.

Loading and Unloading Vehicles

Extreme care must be taken in the loading or unloading of any hazardous material. Except for explosives at Site 300, only MMS, MDD, or Plant Engineering personnel under the supervision of MMS can load and unload Category 1 Hazardous Materials.

At Site 300, explosives may be loaded or unloaded by personnel who have been trained and qualified as described in the *LLNL Health and Safety Manual*, Chapter 24, and *Site 300 Safety and Operational Manual*.

Vehicles shall not be loaded or unloaded unless the vehicle motor is turned off, and the parking brake is set.

Large and/or heavy packages must be positioned so that the weight is equally distributed over the width and length of the conveyance. All hazardous materials shall be secured in a manner that assures that it will not move or shift in transit. See the section, "Vehicle Tiedowns" below.

Smoking is not permitted during loading and unloading operations.

Vehicle Tiedowns

Packages shall be secured to the vehicle during transportation.

Personnel are required to use tiedowns whenever possible. Individual components of a tie-down system must be used in the manner for which they were intended and may not exceed their rated capacities. Defective components may not be used, and all slack must be removed before transport.

Hazardous materials must be sufficiently blocked, braced, and/or tied down to prevent any change in position during transport. Packages must be secured in a manner which does not compromise the integrity of the packaging. During delivery operations, tiedowns must be rechecked and, if necessary, re-secured whenever a package is unloaded or the integrity of the tiedown is compromised.

The waste generator is responsible for palletizing Category 2 Hazardous Materials prior to transport by strapping, blocking, bracing, and taping packages together to prevent any shifting during transport. (See "Placing Waste Containers on Pallets" in **Section 8.5**.)

10.4 Stock Chemical Transfers

Stock Chemicals from Central Supply

MDD orders and issues chemicals on systems-contracting basis (i.e., orders chemicals from a supply vendor and delivers chemicals in DOT packages directly to the user). Chemicals can be issued from Central Supply to users as long as chemicals in aggregate quantities of 5 gal or more are packaged in DOT-approved containers marked and labeled according to the hazard.

Break-bulk Quantities

Break-bulk quantities of chemicals in aggregate quantities less than 5 gal must be from pre-packaged case lots and:

- Packaged in strong, tight containers
 - Packaged to prevent inner receptacles from moving
 - Marked and labeled according to the hazard
 - Accompanied by a Material Safety Data Sheet (MSDS).
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10.5 Firearms Transfers

Armed weapons are exempt from normal containment, communication, and control requirements. When transferred, ammunition is packaged separately from weapons in secure, strong, tight boxes. The contents of the packages must also be labeled in a conspicuous manner.

When firearms are transferred, all requirements of the most current DOE Order for Firearms Safety must be observed.

10.6 Transfers of Explosive Shot Assemblies

Onsite transfers of explosive shot assemblies (including NPLA's) between approved facilities require deviations from existing procedures. Because of their configuration and size, explosive shot assemblies are exempt from normal packaging, compatibility, and placarding requirements.

Packaging

Shot assemblies too large to package in approved containers may be transferred without being packaged if hazardous materials are protected within the assembly from an outside direct impact. Also, assemblies containing initiating devices must be shorted when transferred.

Compatibility

Shot assemblies may contain multiple hazards which may be forbidden to be transported together on the same vehicle according to DOT regulations; however, those assemblies may be transferred if individual noncompatible hazards cannot be separated due to the configuration of the assembly.

Placarding

Shot assemblies may contain multiple hazards which may require multiple vehicle placarding according to DOT regulations; however, those assemblies may be transported in vehicles displaying only the Explosive A placard, if applicable.

**Applicability of
Other
Requirements**

Except for the special conditions listed above, all other requirements concerning vehicle operations, communication, and controls must be observed to provide for the safe transfer of the material.

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